

# PATENT COOPERATION TREATY

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From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

ONTVANGEN GRONINGEN

14 MRT 2005

PCT

To:

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09-07-05 (quw)

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DEANTWOORD

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing  
(day/month/year)

07.03.2005

Applicant's or agent's file reference

P60570PC00

IMPORTANT NOTIFICATION

International application No.

PCT/NL 03/00013

International filing date (day/month/year)

09.01.2003

Priority date (day/month/year)

09.01.2003

Applicant

MOLECULAR BIOPHYSICS INC. et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

## 4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the International  
preliminary examining authority:



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# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P60570PC00		<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/NL 03/00013	International filing date (day/month/year) 09.01.2003	Priority date (day/month/year) 09.01.2003	
International Patent Classification (IPC) or both national classification and IPC H01G9/00			
Applicant MOLECULAR BIOPHYSICS INC. et al.			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 6 sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the opinion</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>			
Date of submission of the demand  03.08.2004		Date of completion of this report  07.03.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer  Ketterl, F  Telephone No. +49 89 2399-2467 	

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/NL 03/00013**

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-21 as originally filed

**Claims, Numbers**

1-38 filed with telefax on 20.12.2004

**Drawings, Sheets**

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

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5. ☒ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

**see separate sheet**

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	1,2,4-28
	No: Claims	
Inventive step (IS)	Yes: Claims	1,2,4-28
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1,2,4-28
	No: Claims	

2. Citations and explanations

**see separate sheet**

**CONCERNING SECTION I:**

- 1). The following amendments go beyond the content of the application as filed, thus failing to meet the requirements of Article 34(2)(b) PCT.
  - 1.1 As regards amended claim 3, no basis can be found in the original application for the extension of the number of electrodes to **at least three**, and of the number of the junctions to **at least two**. Moreover, the embodiment shown in Fig.7, on which the amendment is intended to be based, is only disclosed in combination with one direct electrode in conductive contact with the channel interior.

Hence claim 3 as amended introduces technical information which is not directly and unambiguously derivable from the application as filed.
  - 1.2 The same applies to newly introduced claim 29. No basis can be found for generalizing the use of the device as a semiconductor device in general, or for the generalizing language of the feature "controlling the distribution of charge carriers in the channel interior to resemble a doping profile of the semiconductor device".
  - 1.3 Consequently, claims 30 to 38 which make reference to claim 29, likewise have to be considered as going beyond the content of the application as originally filed.
- 2). The report will therefore be established as if the above mentioned amendments had not been made, see Rule 70.2(c) PCT.

**CONCERNING SECTION V:**

The following comments assume that the lack of clarity of claim 1 outlined in paragraph 2.1 below is overcome by clarification. Moreover, the expression "at two control electrodes" is interpreted as "at least two control electrodes".

- 1). Reference is made to the following document:

D3: WO,A,0022427

This document is not mentioned in the International search report, but was cited by the applicant.

- 2). From D3, there is known (see Fig. 5 and page 12, line 22 to page 6, line 4) a bipolar electronic device which comprises at least one channel with a fluid fillable channel interior. An electrically insulating wall (insulators 32, 33) surrounds at least partially the channel interior which, in use, contains charge carriers (see page 8, lines 21 to 26). The device further comprises at least two control electrodes (conductors 34 and 35) which are electrically isolated from the channel interior and in capacitive contact with the channel interior.

In the device of D3, application of a voltage to conductors 34 or 35 cause a movement of the liquids in the vicinity of the upper or lower walls in the direction of arrows C and D, respectively.

- 2.1 Contrary to that, the electrodes of the claimed device control the charge carriers in an area of the channel interior between the electrodes such that at least one junction is obtained.

However, no substantial feature can be seen in claim 1 as presently worded by which such a different performance can be explained. Hence it must be concluded that present independent claim 1 does not meet the requirement following from Article 6 PCT taken in combination with Rule 6.3(b) PCT that any independent claim must contain all the technical features essential to the definition of the invention.

- 2.2 Claim 1, if amended so as to incorporate these missing essential features, would be new with respect to D3 and would therefore not only meet the requirements of Article 33(4) PCT, but also of Article 33(2) PCT.

- 2.3 An accordingly amended version of claim 1 would also meet the requirements of Article 33(3) PCT. There is no suggestion in D3 or in the other references cited in the International search report by which a skilled person would be prompted to modify the

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/NL 03/00013

known electronic device in a way that the different performance mentioned above is obtained.

- 3). Dependent claims 2 and 4 to 27 define embodiments of the bipolar device of claim 1 and would therefore also meet the requirements of Article 33(2) to (4) PCT.
- 3.1 The same holds for the integrated circuit of independent claim 28, which comprises at least one of such bipolar devices.